

MARINE RESERVOIR CORRECTIONS FOR THE BRITISH COLUMBIA COAST: PALEOCEANOGRAPHIC AND ARCHAEOLOGICAL IMPLICATIONS

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We have constructed a record of the marine reservoir correction for offshore islands along the British Columbia coast by comparing radiocarbon dates on wood and shell from raised beach deposits, archaeological middens, and sediment cores. This work extends earlier studies reported in Southon, Nelson, and Vogel (1990), and has implications for reconstructions of paleo- ocean circulation and sea level histories and for archaeological dating.

The results show that the marine reservoir correction for this region through much of Younger Dryas time and into the early Holocene was similar to that of today. We infer that input of atmospheric CO₂ to the North Pacific subpolar gyre in late glacial time was not enhanced due to the increased extent of the gyre or increased storminess; or such increases were compensated for by other factors such as stronger upwelling, enhanced sea ice cover, etc. If this hypothesis is correct, ages of surface waters off Japan (within the western region of the gyre in the late glacial) may have decreased by as much as 500 years as the polar front moved North. Such a shift represents a significant complication in investigations of past ocean ventilation ages through studies of radiocarbon age differences of benthic and planktonic foraminifera.

Recent archaeological discoveries in British Columbia and southern Alaska have increased interest in the coastal region as a possible pathway for the peopling of North America. However, interpretations of dates on archaeological materials must also take into account this offset, if the material dated is marine or represents an individual with a wholly or partly marine diet.

Reference

J.R.Southon, D.E.Nelson and J.S.Vogel, 1990, *Paleoceanography* 5, 197-206

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